

We claim:

1. A shelf-stable food product comprising an at least partially hydrated food having a water activity of at least about 0.65 and a sufficient amount of an added acidulent to give the food an acidic pH of up to about 6, said food being non-aseptically packaged in a substantially moisture-tight package, said food product capable of ambient temperature storage for at least about 30 days without spoilage of said food within said package.
2. The food product of claim 1, said acidulent selected from the group consisting of sparingly soluble Group IIA acidic complexes, highly acidic metalated organic acids, highly acidic metalated mixtures of inorganic acids, and mixtures of the foregoing.
3. The food product of claim 2, including an additive combined with said acidulent to form an adduct, said additive selected from the group consisting of alcohols, organic acids, periodic acid and surfactants.
4. The food product of claim 1, said water activity being above about 0.7.
5. The food product of claim 1, said pH being from about 1-4.5.
6. The food product of claim 1, said food being at least partially cooked.
7. The food product of claim 6, said food being fully cooked.
8. The food product of claim 1, said acidulent being intimately mixed with said food.
9. The food product of claim 1, said acidulent being applied to the surface of said food.
10. The food product of claim 1, said food comprising at least about 35% by weight grain.

11. The food product of claim 10, said grain selected from the group consisting of wheat, oats, barley, corn, milo, rice, rye and mixtures thereof.

5 12. The food product of claim 10, said grain being present at a level of at least about 75% by weight.

13. The food product of claim 1, said food comprising pasta.

10 14. The food product of claim 1, said food comprising rice.

15 15. The food product of claim 1, said acidulent being present at a level of from about 0.1-7% by weight, based upon the total weight of the at least partially hydrated food taken as 100% by weight.

16. The food product of claim 15, said acidulent level being from about .1-2% by weight.

17. The food product of claim 1, including a quantity of a preservative.

20 18. The food product of claim 17, said preservative selected from the group consisting of the alkali metal sorbates.

25 19. The food product of claim 1, said acidulent comprising acidified calcium sulfate.

20. The food product of claim 1, said food comprising a dough.

21. The food product of claim 20, said dough comprising a cookie dough.

30 22. The food product of claim 1, said acidulent being encapsulated in an extruded substrate matrix.

23. The food product of claim 1, said acidulent including an additional acid selected from the group consisting of C8-C22 fatty acids, C2-C6 mono- and dicarboxylic acids, and mixtures thereof.

5 24. The food product of claim 1, said food being an extruded food.

25. An extruded product including a matrix encapsulating an acidulent selected from the group consisting of sparingly soluble Group IIA acidic complexes, highly acidic metalated organic acids, highly acidic metalated mixtures of inorganic acids, and mixtures
10 of the foregoing.

26. The product of claim 25, including an additive combined with said acidulent to form an adduct, said additive selected from the group consisting of alcohols, organic acids, periodic acid and surfactants.
15

27. The product of claim 25, said matrix being formed of protein and/or starch.

28. The product of claim 27, said matrix formed from grain selected from the
20 group consisting of wheat, oats, barley, corn, milo, rice, rye and mixtures thereof.

29. The product of claim 27, said matrix formed from starch.

30. The product of claim 28, said acidulent being present at a level of from
25 about 0.1-7% by weight, based upon the total weight of said grain taken as 100% by weight.

31. The product of claim 25, including a quantity of a preservative.

32. The product of claim 31, said preservative selected from the group
30 consisting of the alkali metal sorbates.

33. The product of claim 25, said acidulent comprising acidified calcium sulfate.

34. The product of claim 25, said acidulent including an additional acid selected from the group consisting of C8-C22 fatty acids, C2-C6 mono- and dicarboxylic acids, and mixtures thereof.

35. An extruded grain product including a matrix encapsulating a preservative.

36. The product of claim 35, said matrix being formed of protein and/or starch.

37. The product of claim 35, said matrix formed of grain selected from the group consisting of wheat, oats, barley, corn, milo, rice, rye and mixtures thereof.

38. The product of claim 35, said preservative selected from the group consisting of the alkali metal sorbates.

39. The product of claim 35, said preservative being present at a level of from about 10-20% by weight, based upon the total weight of said grain taken as 100% by weight.

40. In a dough comprising individual quantities of wheat flour and water, the improvement which comprises respective amounts of treated first and second wheat flour fractions, said first treated wheat flour fraction comprising an extruded wheat flour with an acidulent encapsulated therein, said second treated flour fraction comprising an extruded wheat flour with a preservative encapsulated therein.

41. The dough of claim 40, said acidulent being present in said dough at a level of from about 0.1-7% by weight, based upon the total weight of the dough taken as 100% by weight.

42. The dough of claim 41, said acidulent being present in said dough at a level of from about 0.1-2% by weight

43. The dough of claim 41, said preservative being present in said dough at level of from about 0.1-0.5% by weight, based upon the total weight of the preservative taken as 100% by weight.

44. The dough of claim 43, said preservative being present in said dough at a level of from about 0.1-0.2% by weight.

45. The dough of claim 40, said dough, when packaged in a substantially moisture tight package, being capable of ambient temperature storage for at least about 30 days without spoilage of said dough within said package.

46. The dough of claim 40, said dough having a water activity of at least about 0.65 and a pH of up to about 6.

47. The dough of claim 46, said water activity being above about 0.75 and said pH being from about 1-4.5.

48. A method of preparing a shelf-stable food product comprising the steps of:

providing an at least partially hydrated food having a water activity of at least about 0.65 and a sufficient amount of an added acidulent to give the food an acidic pH of up to about 6; and

non-aseptically packaging said food in a substantially moisture-tight package, said food product capable of ambient temperature storage for at least about 30 days without spoilage of said food within said package.

49. The method of claim 48, said acidulent selected from the group consisting of sparingly soluble Group IIA acidic complexes, highly acidic metalated organic acids, highly acidic metalated mixtures of inorganic acids, and mixtures of the foregoing.

5 50. The method of claim 49, said food including an additive combined with said acidulent to form an adduct, said additive selected from the group consisting of alcohols, organic acids, periodic acid and surfactants.

51. The method of claim 48, said water activity being above about 0.7.

10 52. The method of claim 48, said pH being from about 1-4.5.

53. The method of claim 48, said food being at least partially cooked.

15 54. The method of claim 53, said food being fully cooked.

55. The method of claim 48, said acidulent being intimately mixed with said food.

20 56. The method of claim 48, said acidulent being applied to the surface of said food.

57. The method of claim 48, said food comprising at least about 35% by weight grain.

25 58. The method of claim 57, said grain selected from the group consisting of wheat, oats, barley, corn, milo, rice, rye and mixtures thereof.

59. The method of claim 57, said grain being present at a level of at least about
30 75% by weight.

60. The method of claim 48, said food comprising pasta.

61. The method of claim 48, said food comprising rice.

5 62. The method of claim 48, said acidulent being present at a level of from about 0.1-7% by weight, based upon the total weight of the at least partially hydrated food taken as 100% by weight.

10 63. The method of claim 62, said level being from about 0.1-2% by weight.

64. The method of claim 48, including a quantity of a preservative.

15 65. The method of claim 64, said preservative selected from the group consisting of the alkali metal sorbates.

66. The method of claim 48, said acidulent comprising acidified calcium sulfate.

20 67. The method of claim 48, said food comprising a dough.

68. The method of claim 67, said dough comprising a cookie dough.

25 69. The method of claim 48, said acidulent being encapsulated in an extruded substrate matrix.

70. The method of claim 48, said acidulent including an additional acid selected from the group consisting of C8-C22 fatty acids, C2-C6 mono- and dicarboxylic acids, and mixtures thereof.

30 71. The method of claim 48, said food being an extruded food.